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ABSTRACT

Workplace training strategies in selected foreign countries were examined from the standpoint of their relevance to development of a national training policy in the United States. Case studies of the following were conducted: apprenticeship training in Germany, enterprise-based training in Japan, stimulation of training by training taxes in France and Australia, local training consortia in the United Kingdom, and government-supported training in Sweden. The following menu of policy options was proposed: federal funding of training consortia composed of individuals from employers' associations, unions, schools, local government, and other training institutions; incentives and tax credits for firms with substantial training expenditures; a national training levy with lower rates for smaller firms to stimulate firm-provided training; establishment of occupational skill standards by industry and a national standard of certification of workplace skills; expansion of apprenticeship programs outside the traditional manufacturing sector; additional financial support for youths to acquire training off the job; a national clearinghouse of information on successful training initiatives and available resources; and coordination of all federal training initiatives with regional, state, and local industry efforts. Contains 41 references and 12 tables. (MN)

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# Strategies for Workplace Training

## Lessons from Abroad

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# Strategies for Workplace Training

## Lessons from Abroad

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## Executive Summary

One of the key differences in the structure of the labor market in the United States compared with labor markets in Europe or Japan is in the nature of skill development of the workforce. This paper considers how the discussion in the United States on a national training policy may be informed by the experiences of other countries.

Workplace training is quite different from other forms of human capital investment such as education since there are two parties in the training decision—the individual (who may or may not be represented by a union) and the firm. These two agents may have very different levels of risk aversion, time horizons, information about the labor market, access to capital markets, and preferences. Further, factors such as the type of skills needed by workers, the portability of these skills, the rates of employee turnover, as well as the size of the firm (which affects the cost of training per employee) figure differently in the decision of firms and individuals to invest in training.

*While the specific structure of the delivery of training varies among them, these countries share a common feature—a high degree of coordination and cooperation among employers, unions, employees, government, schools, and other training institutions.*

This paper examines training institutions in Germany and Japan since they are often cited as the two leading examples of best practices in private-sector training. Drawing from the experiences of these and the Nordic countries, it is clear that while the specific structure of the delivery varies among them, these countries share a common feature—a high degree of coordination and cooperation among employers, unions, employees, government, schools, and other training institutions. In addition, it is useful to examine the more recent transformations of the training systems in Great Britain, France, and Australia where policies have been implemented to stimulate additional training strategies at the local level. In France and Australia the governments have imposed a training levy to motivate firms to provide more training. The relative success of these different strategies (especially for smaller and medium-sized firms) are examined in this report.

Underinvestment in training in the U.S. appears to be of two forms. First, in certain sectors, U.S. firms may be spending less and providing more limited training to their nontechnical or nonmanagerial employees than their competitors in other countries. Second, in other sectors the level of expenditures or hours of training may be the same, but due to lower initial skill levels, this level of investment is not sufficient to achieve the same degree of skill proficiencies found in countries such as Japan or Germany. Policies directed at stimulating training to increase productivity should take both of these factors into account.

*No single option will meet the training needs of all workers: new entrants, currently employed workers, displaced workers, and the unemployed. Therefore, a menu of options and initiatives needs to be created to address this wide range of training needs.*

Coordination and cooperation of all the interested parties, as noted above, is one important and common characteristic of those countries with the most extensive post-school skills development. Therefore, independent of the particular menu of training delivery systems, a key feature of a successful training strategy in the U.S. will be how well we coordinate our training programs and increase the cooperation among all those involved in training and its outcomes.

There are a variety of federal options that could be pursued to stimulate further training. However, no single option will meet the training needs of all workers: new entrants, currently employed workers, displaced workers, and the unemployed. Therefore, a menu of options and initiatives needs to be created to address this wide range of training needs. Initiatives that counteract a market failure in the provision of training are most effective. A review of practices and experiences abroad suggests the following menu of policy options:

- Federal funding of training consortiums composed of individuals from employers' associations, unions, schools, local government, and other training institutions in order to stimulate cooperation and coordination among the interested parties and to create economies of

scale in the provision of training. These consortiums should be targeted at the training needs of small and medium-sized enterprises.

- Incentives and tax credits for firms that have substantial training expenditures. These credits could be in a graduated form with minimum and maximum thresholds for the percent of payroll spent on training. In addition, firms should receive tax credits for training workers who are currently unlikely to receive training, especially women, minorities, and front-line workers. These credits should be coordinated with other investment tax credits.

***Firms should receive tax credits for training workers who are currently unlikely to receive training, especially women, minorities, and front-line workers.***

- A national training levy with a lower rate for smaller firms to stimulate more firm-provided training. This levy will be more successful if it is just one part of an overall training strategy.

- Establishment of occupational skill standards by industry and of a national standard of certification of workplace skills. Skill standards in each industry should be jointly determined by representatives of employers' associations, unions, education and training institutions, and government.

- An expansion of apprenticeship programs outside the traditional manufacturing sector. Currently, only three percent of young men and less than one percent of young women participate in apprenticeship training by the age of 25. The content and structure of these programs should be jointly determined by employers, unions, education, training, and government institutions brought together in local training consortiums, but should be linked to the establishment of skill standards discussed

in the previous point. A key success factor in apprenticeship programs in Germany is the support they receive from financial, educational, government, union, and employer institutions.

- Additional financial support for youths to acquire training off-the-job. Nationwide standards and guidelines that conform to the skills and certification standards described above should be established for institutions that have students receiving government financial support. This will also increase the portability of the credentials conferred by these institutions.

***All federal training initiatives need to be coordinated with regional, state, and local industry efforts.***

- A national clearinghouse of information on successful training initiatives and available resources should be established.

- Finally, all federal training initiatives need to be coordinated with regional, state, and local industry efforts so that they complement and build on local training needs and knowledge.

## Introduction

As firms in the United States in the 1990s seek to increase productivity and remain competitive in a marketplace that has become more competitive due to deregulation, technological innovation, and international competition, many find themselves re-examining the skill formation process of their workforce. As shown in **Table 1**, labor productivity growth in the United States in the 1970s and 1980s lagged behind labor productivity growth in countries such as Japan, Germany, Sweden, Italy, and the United Kingdom. One of the key differences in the structure of the labor market in the United States compared with the labor market in Japan and Germany is in the nature of skill development of the workforce. While the numbers in Table 1 indicate that productivity has been rising in the U.S. in the 1980s, a major reason for this growth has been the shutting down of older and obsolete plants in manufacturing. This type of productivity growth, however, is not easily sustained. There is now an increasing consensus that in order for U.S. firms to compete, and for U.S. workers to maintain their standard of living, the U.S. needs a national strategy to develop a workforce that is well educated, highly skilled, and broadly trained.

*In order for U.S. firms to compete, and for U.S. workers to maintain their standard of living, the U.S. needs a national strategy to develop a workforce that is well educated, highly skilled, and broadly trained.*

This paper considers how the experiences of other countries can inform the discussion in the United States on a national training policy. The paper examines training institutions in Germany and Japan since they are often cited as the two leading examples of best practices in private sector training (see *Worker Training: Competing in the New International Economy*, U.S. Office of Technology Assessment (1990) and Sako (1990) for excellent earlier surveys on these institutions). In addition, this paper discusses the experience of other countries that have attempted to transform their training institutions, in particular, France, Australia, and the United Kingdom. While there is much to be learned about firm-provided training from countries such as Germany and Japan, we may also be able to learn a great deal from these other

**Table 1**
**Labor Productivity—Average Annual Growth Rates in GDP Per Person in Employment**

| Country | 1960-1968 | 1968-1973 | 1973-1979 | 1979-1983 | 1983-1989 |
|---|---|---|---|---|---|
| United States | 2.6% | 0.7% | 0.0% | 0.2% | 1.3% |
| Canada | 2.3 | 2.4 | 1.4 | 0.4 | 1.6 |
| West Germany | 4.1 | 4.3 | 2.5 | 1.7 | 2.4 |
| United Kingdom | 2.7 | 3.1 | 1.3 | 2.2 | 1.3 |
| France | 4.9 | 4.3 | 2.5 | 1.7 | 2.4 |
| Sweden | 4.0 | 3.0 | 0.5 | 0.8 | 1.7 |
| Japan | 8.5 | 7.7 | 2.9 | 2.1 | 3.4 |
| Italy | 6.2 | 4.9 | 2.8 | 1.3 | 2.7 |
| Australia | 2.4 | 2.6 | 1.8 | 0.7 | 1.0 |

Source: Organisation for Economic Co-operation and Development. *Economic Outlook*. Paris: OECD, December 1990.

***As technologies change and the need for cross-functional competencies and problem solving increases, so too does the demand for multi-skilled workers.***

countries, especially on how to implement changes to our current training practices.

Part of the reason why we are in our current productivity and skills crisis is due to our past successes. By defining jobs narrowly and making each job easy to learn, many U.S. firms obtained increased productivity through specialization and through the interchangeability of workers with limited skills and experience, rather than training workers to become multi-skilled. As technologies change and the need for cross-functional competencies and problem solving increases, so too does the demand for multi-skilled workers. Therefore, it is not surprising that the countries that are experiencing rapid productivity growth have typically followed a strategy in which firms provide both general and firm-specific skills training to their workers. This creates the potential for a new type of flexibility in the workplace which is more compatible with rapid technological change, new production techniques such as "just-in-time," and otherwise altered organizational structures. Broader skills training reduces the need for supervisors and allows the day-to-day management of the firm to be handled increasingly by the workers themselves. This reduces the hierarchal structure of a typical firm dramatically. Unfor-

tunately, there appear to be barriers to the greater provision of general skills training in the United States.

**Barriers to Increased Training**

There are a variety of reasons why firms do not provide more training even though they might wish to do so. For example, if a firm's workers require more general skills than they currently have, a firm may be reluctant to invest in their training if employee turnover is high. In addition, if a firm invests in a worker's training and the skills are readily identified as valuable to other employers, the firm runs the risk that the employee will be hired away by a firm that has not paid for the training (i.e., poaching or "cherry-picking"). Therefore, firm-specific training that is not portable from firm to firm is a more attractive investment to firms than more general training. This would not be a problem if capital markets were perfect and workers could borrow to finance more general training, or employers could pay workers lower wages during general training periods. However, capital markets are far from perfect, workers have different levels of risk aversion than firms, and other institutional constraints may result in a market failure in the provision of general training.

*If a firm invests in a worker's training and the skills are readily identified as valuable to other employers, the firm runs the risk that the employee will be hired away by a firm that has not paid for the training.*

It has been argued by some that minimum wages may cause firms to invest in less training. As a result, recent increases in the minimum wage have included a provision that allows employers to pay a lower "training" wage to new employees. It was thought that this would stimulate training, especially for young workers. A recent paper by Katz and Krueger (1990) examined the impact of recent increases in the minimum wage on the employment of workers in the fast food industry. One of their findings was that few firms in this industry used this subminimum wage or training wage for their new hires. This industry is a major employer of young workers and this finding suggests that minimum wages are not a major reason why these firms do not do more training. Since the skill levels associated with these types of jobs are low, it is not clear

that much training is required. Therefore, payment of a lower training wage is not going to result in increased training for this sector of the economy.

Another barrier to training is firm size. Smaller firms often find that the average costs of training workers are much higher than those paid by larger firms. This is due to a variety of reasons. First, because the fixed costs associated with training can be high, having fewer employees raises the average cost of training per employee. Second, in a small firm, the production losses associated with a worker being away from the workplace for training can be higher than in a large firm. Third, larger firms may be in a better position to cope with potential poaching than smaller firms because they can provide a more extensive internal career ladder to workers within their organization. More generally, even though firms may recognize that expenditures on training increase their ability to adopt, develop, and implement new technology, these advantages may diffuse easily to competitors. As a result, individual firms are unable to internalize the benefits from training innovations. One possible solution to this problem is to create employer training consortiums so that smaller employers can pool their resources and achieve the scale of larger firms. This has been part of the training and employment strategy pursued in recent years in the U.K., and this will be examined in more detail in the following sections.

*Even though firms may recognize that expenditures on training increase their ability to adopt, develop, and implement new technology, these advantages may diffuse easily to competitors. As a result, individual firms are unable to internalize the benefits from training innovations.*

In a human capital model if there is underinvestment in training we would expect to see a high rate of return to training. There is some empirical evidence that this is in fact the case in the United States. Blanchflower and Lynch (1991) compare the extent and returns to training for young workers in the United States and Great Britain. They observe a much higher incidence of training in Britain than in the U.S., but a higher rate of return to the training in the United States. This suggests that there may be underinvestment in training for U.S. youths compared to British youths. More generally, the laissez-faire approach to training in the U.S. seems to have generated a

highly decentralized, disjointed, and disorganized training system. Small and medium-sized employers interested in expanding the skills base of their workers are concerned with the costs of training, especially if they then lose the workers to a competitor.

Countries such as Japan seem to have gotten around this problem of capturing the returns to training by imposing high costs on employees who quit a firm (wage gains to quitters are low). In addition, firms are very reluctant to hire away workers from other firms because, historically, the social costs paid by poaching have been high. This is one reason why there is much higher average employee tenure in Japan than is the case in other developed economies. In addition, when demand falls, Japanese firms are less likely to lay off their workers than their U.S. counterparts. Therefore, with lower employee turnover, firms are able to capture the returns to investments in more general forms of training. The ability of this system to sustain itself may be challenged as employee turnover increases in sectors such as finance and banking. It will be interesting to see what impact this has on the training strategies pursued by Japanese firms in this sector.

***Germany has solved the problem of capturing returns to training by its tripartite structure of employers, unions, and the government jointly determining a national strategy for training.***

Germany has solved the problem of capturing returns to training by its tripartite structure of employers, unions, and the government jointly determining a national strategy for training. Local chambers of commerce then enforce this policy and protect firms that are training a large number of workers from excessive poaching. More generally, the German dual system of apprenticeship training is characterized by coinvestment in training, codetermination of the content of training programs, and certification of skills upon completion of training. These three components result in more general-skills training being undertaken by firms in Germany.

In the Nordic countries, and to a lesser extent in recent years in the U.K., the potential market failure in general training is addressed by a greater role of government training. While this strategy may be useful in solving a market failure it

can be quite costly if the government ends up also financing firm-specific training. Finally, in France and Australia the government has imposed a training levy to motivate firms to provide more training. The relative success of these different strategies will be examined in more detail in the following sections of this report.

*The many forms of workplace training include the following: formal and informal on-the-job training; employer-sponsored off-the-job training in schools or vocational institutions; apprenticeship programs; and joint public-private training programs.*

**Definitions**

Before examining specific differences in training institutions across countries and the lessons that we can learn from these institutional arrangements, it is necessary to first clarify what is meant by workplace training. The many forms of workplace training include the following: formal and informal on-the-job training; employer-sponsored off-the-job training in schools or vocational institutions (that may or may not be combined with on-the-job training); apprenticeship programs; and joint public-private training programs. There are also many possible vendors of training including firms; training contractors; schools; for-profit vocational, technical, and business institutions; the government; unions; industry consortiums; and, customer firms. These providers will vary widely across countries. Given the many different forms and providers of training it is very difficult to measure training differences across countries.

Even if it were possible to come up with a common definition of training it is difficult to know how to measure training. For example, do you measure the incidence or the duration of training? Do you collect information on training from individuals or firms? Firm-based data provide information on characteristics of the firm that are important in understanding the training needs of a firm. In addition, firm-based data allow for the possibility of directly examining the link between training and productivity. However, these data do not allow one to examine previous sources of training for the

worker and detailed personal characteristics of workers. Longitudinal data on individuals allow one to examine the portability of training across employers and to examine access to training by different demographics groups. Ideally, one would like to have matched firm and individual-based data. Unfortunately, it is unusual to have this sort of data within one country, and even more difficult to obtain survey information across countries that is readily comparable.

Analyzing workplace training is already quite difficult within a country. Examining it across countries can very quickly lead to a situation of comparing apples with oranges, or even apples with elephants! Therefore, great care must be taken in interpreting cross-country differences in training. Nevertheless, it is important to have some understanding of what is occurring across countries in the provision of training; how this compares with the U.S. situation, supporting structures to training delivery, e.g., schools and banks; current developments and issues with training in these countries; and, how transferable these institutions might be to the United States.

*Different countries focus on the training needs of different groups of workers. These worker groups include new entrants into the labor force; re-entrants; displaced workers; currently employed workers; and the unemployed.*

As I present cross-country differences in training, it is important to note that different countries focus on the training needs of different groups of workers. These worker groups include new entrants into the labor force (youths); re-entrants (women, retirees, and immigrants); displaced workers; currently employed workers (those needing training for promotion and those needing retraining due to organizational change or technological changes); and the unemployed. Each of these groups will have different training needs so one training program or strategy will not work for all of these workers. Most of this paper, however, will focus on the training structures for new entrants and those currently employed since these are the workers who are the main focus of the current debate on competitiveness.

## Cross-Country Comparisons of Training

There have been several recent papers reviewing training that have included cross-country comparisons (e.g., Bishop 1991, Kochan and Osterman 1991, and Lynch 1991a). Each of these papers present slightly different numbers on cross-country comparisons due to the difficulty associated with measuring training. **Table 2** presents a summary of the basic differences in the education and training structures for young workers across a group of countries. As can be seen from the first column, there is a very high percentage of young workers in Germany who follow a vocational education track in school. Seventy percent of youths in Germany participate in apprenticeship schemes which combine on-the-job work and training with off-site classroom training. Only 30 percent of U.S. youths are in any type of vocational education and even fewer are in apprenticeships. Approximately three percent of noncollege-bound youths begin an apprenticeship in the U.S. (see Blanchflower and Lynch 1991 and Lynch 1992a). However, as can be seen in the second column of Table 2, a much higher percentage of youths in the United States go on to post-secondary education than in other countries. This is a positive aspect of our education and training system as individuals have much more flexibility to get on to an academic track at a later stage in their lives than is true in other countries. However, the enrollment in universities granting the equivalent of a baccalaureate is not so different across countries (with the exception of the U.K.). This gap narrows even further when one examines completion rates from these institutions.

*Seventy percent of youths in Germany participate in apprenticeship schemes which combine on-the-job work and training with off-site classroom training. Only 30 percent of U.S. youths are in any type of vocational education and even fewer are in apprenticeships.*

**Table 3** presents rough measures of the percentage of individuals in employment who receive training at their firm. Unfortunately, the time period over which this incidence is measured varies from country to country (e.g., in the U.S. the incidence refers to the percent who received formal training with their current employer while the data on Japan refer only

**Table 2**
**Education and Training of Young Workers**

| Country | Percent of Youth in Vocational Education | Percent of Youth in Post-Secondary School | Percent of Youth in University* |
|---|---|---|---|
| United States | 30% | 57% | 36% |
| West Germany | 70 | 30 | 26 |
| England | 18 | 21 | 8 |
| France** | n.a. | 50*** | 27 |
| Sweden | 50 | 37 | 26 |
| Japan | 28 | 30 | 24 |
| Australia**** | 15 | 23 | 18 |

* First-year enrollment in schools conferring baccalaureate degrees or higher.
** French data is from CEREQ, Training and Employment: French Dimensions, Spring 1991.
*** This number has risen to 50 percent in 1990 from 30 percent in 1975.
**** Data refer to 1990 activities of 18-year-olds from Department of Education and Training, Canberra, Australia.

Source: Various sources but primarily - U.S. General Accounting Office. Training Strategies: Preparing Noncollege Youth for Employment in the U.S. and Foreign Countries. Washington, DC: U.S. General Accounting Office, 1990, p. 12.

***A much higher percentage of youths in the United States go on to post-secondary education than in other countries. However, the enrollment in universities granting the equivalent of a baccalaureate is not so different across countries (with the exception of the U.K.).***

to training in the last two years—see Annex 5A in OECD (1991)). However, while these numbers are not easily comparable across countries there are some interesting differences across countries. For example, in Germany, approximately 13 percent of all workers receive training over a survey period of one month, but over three quarters of all youths are in training in this survey period. Meanwhile in Japan and Sweden, training is concentrated on workers who are 30-44 years of age and have worked at the firm for a longer period of time. Therefore, some countries seem to concentrate their training at the beginning of workers' careers while others follow a more curvilinear relationship. This may have important implications for the ability of a firm to respond to changes in organizational structure and new technology.

**Table 3**
**Enterprise-Related Training—Percent of Individuals Receiving Training**

| Country | |
|---|---|
| United States (1983) | 11.8% all workers (Current Population Survey, Formal Training) |
| Canada*(1985) | 6.7% all workers (formal training) |
| West Germany (1989) | 12.7% all workers<br>76.0% 15-19 year old |
| Great Britain (1989) | 14.4% all workers |
| France (1989) | 4.6% all workers<br>43.0% 15-19 year old<br>26.6% employees in firms 10+ |
| Sweden (1987) | 25.4% all workers |
| Japan (1989) | 36.7% (within last two years) |
| Australia (1989) | 34.9% (in-house) |

*Canadian data is from the 1985 Adult Training Survey, *Statistics Canada*, 1986.
Source: Organisation for Economic Co-operation and Development.

***Noncollege youth in the United States receive very little formal training after they leave school. For example, only four percent of young workers who are not university graduates in the U.S. get formal training at work.***

The numbers in Table 3 do not shed much light on who is actually receiving training. While the percentage who receive training overall appears quite similar in the U.S. and Germany, those people who receive training in the U.S. are primarily technical and managerial employees with university degrees (see Bartel (1989) for details on the occupational distribution of training). Noncollege youth in the United States receive very little formal training after they leave school. For example, only four percent of young workers who are not university graduates in the U.S. get formal training at work (see Lynch (1991b, 1992a) for further details). More generally, nonmanagerial or nontechnical workers receive very little skill-enhancing formal training in the U.S. compared to other countries.

It has been argued that U.S. firms do not spend as much on training as firms in other countries do. Measuring actual

**Table 4**
**Average Percent of Total Wage Bill Spent on Training**

| Country | |
|---|---|
| United States | 1.8% (Larger firms in *Training* magazine survey) |
| Canada* | 0.9% (1985) |
| West Germany | 1.8% (1984) |
| United Kingdom | 1.3% (1984) |
| France | 1.6% (1984) |
| Japan | 0.4%** |
| Australia (Private Sector) | 1.7% |

* Canadian data is from the Adult Training Survey, Statistics Canada, as reported by the Canadian Labour Market and Productivity Centre.
**Training expenditures as a percentage of monthly labor costs but excludes trainees' wages.

Source: Organisation for Economic Co-operation and Development. "Employment Outlook." Paris: OECD, July 1991, and *Training*, 1988 for the U.S.

***On average, across the U.S., Germany, U.K., France, and Australia it seems that firms are spending roughly 1.5 percent of their total wage bill on training.***

expenditures on training is not very straightforward. The costs of training can include direct costs such as materials, salaries of teachers, wages for trainees, transportation, and other items associated with off-site training. But perhaps a larger share of training costs comes indirectly from lost productivity, or time spent by coworkers or supervisors training new hires. When one examines expenditures on training by firms across countries it is important to note that firms in different countries use various accounting procedures in reporting total expenditures. Given this important caveat, **Table 4** presents calculations done by the Organisation for Economic Co-operation and Development (OECD) (1991) on expenditures on training by firms. On average, across the U.S., Germany, U.K., France, and Australia it seems that firms are spending roughly 1.5 percent

of their total wage bill on training. There do not seem to be huge differences across these countries in the amount spent.

The only exception is Japan where it appears that only 0.4 percent is spent on training. Should we really believe that Japanese firms spend this little on training given the numbers presented in the previous tables? Part of the discrepancy in these numbers lies in the fact that the cost numbers for Japan do not include trainee wages. But perhaps more importantly, the main difference between Japan and other countries is how training is embedded in the production system in Japan (see Hashimoto (1991) for a detailed discussion of this including case study comparisons of Japanese plants, Japanese transplants in the U.S., and U.S. firms and their organization of work and training). The fact that the reported expenditure is low in Japan also reflects the decision not to include time spent by supervisors training workers in the calculations of training expenditures. Instead, only those direct costs associated with off-site training are included. Therefore, different accounting rules across countries can make cross-country comparisons of training expenditures irrelevant. In fact, the apparently low numbers for Japan may actually show how successful Japanese firms have been in incorporating training into the production process.

*Very little is spent by the government in the U.S., Australia, and Japan on employee training. Countries such as Sweden, Italy, France, Canada, and Germany spend a much higher amount.*

Firm-financed training can be supplemented in varying degrees by government expenditures on training. **Table 5** presents a summary description of the percent of GDP spent by the government on training programs across a selection of OECD countries. Very little is spent by the government in the U.S., Australia, and Japan on employee training. Countries such as Sweden, Italy, France, Canada, and Germany spend a much higher amount. Most governments support training for the unemployed or those at risk, but countries such as Italy and Great Britain have large public expenditures on the training of youths.

While Tables 2 through 5 provide some sense of cross-country variations in training, the lack of comparability in data

**Table 5**
**Public Expenditures on Labor Market Programs as a Proportion of GDP (1990)**

| Country | Training for Unemployed Adults | Training for Employed Adults | Youth Training |
|---|---|---|---|
| United States | .09 | .0 | .0 |
| Canada | .22 | .04 | .0 |
| Germany | .35 | .03 | .01 |
| Great Britain | .19 | .03 | .18 |
| France (1989) | .27 | .04 | .14 |
| Sweden | .45 | .01 | .0 |
| Japan | .0 | .03 | .0 |
| Italy (1988) | .03 | .0 | .43 |
| Australia | .06 | .0 | .04 |

Source: Organisation for Economic Co-operation and Development. "Employment Outlook." Paris: OECD, July 1991.

***In the auto industry Krafcik found that the average worker in Japan or in a Japanese-owned plant in the U.S. spent twice to three times as much time in training as a U.S. worker.***

and accounting methods makes the information less than satisfactory. Another approach to follow is to focus on specific industries and occupations across countries and examine how workers within a firm in these industries or occupations are trained. This more micro, firm-based case study approach can reveal differences in the content of training which may be much more important in the competitiveness debate than crude measures of expenditures on training. **Table 6** presents firm data on two industries—the auto and nuclear power industries. In both of these studies the researcher examined the actual number of hours spent in training for employees in a particular occupation. In the auto industry Krafcik (1990) found that the average worker in Japan or in a Japanese-owned plant in the U.S. spent twice to three times as much time in training as a U.S. worker. These average numbers do not control for age and experience of the workforce, so it is possible that the reason for fewer hours of training in the U.S. is due to an older and more experienced auto workforce here than in Japan or the Japanese transplants. Observing a difference in average hours of training that is not corrected for experience may be misleading. However, the second line of Table 6 shows that for new

**Table 6**
**Industry Studies of Training**
**(In Hours)**

**AUTO**

| | Japan/ Plants | Japan/ Transplants | United States |
|---|---|---|---|
| Average for all Workers | 85 | 55 | 30 |
| New-hire Assembly Workers | 310 | 280 | 48 |

Source: Krafcik, John. "Training and the Automobile Industry: International Comparisons." Report to Office of Technology Assessment, February 1990.

**NUCLEAR POWER**

| | Germany* | France | United States |
|---|---|---|---|
| **Technicians** | | | |
| Total Hours** | 560/1340 | 460 | 640 |
| Fundamentals, Basic Technology, and Site Familiarization | 240/40 | 0 | 520 |

* First number is for maintenance workers, second number is for those in plant operations.
**Includes fundamentals, basic technology, site familiarization, basic nuclear technology, plant systems, integrated operation, and administrative procedures.

Source: Mason, John H. "International Comparative Analysis of Training Requirements for Technical Professionals: A Case Study of the Nuclear Power Industry." MIT Sloan Master Thesis, 1990.

***New hires in Japan or Japanese transplants receive approximately 300 hours of training, while their U.S. counterparts receive only 48 hours of training.***

assembly workers the gap across the three types of plants is even greater. New hires in Japan or Japanese transplants receive approximately 300 hours of training while their U.S. counterparts receive only 48 hours of training.

The study by Mason (1990) on cross-country differences in training reveals another dimension by which training differs across countries. If one examines technicians in the highly regulated nuclear power industry working with the same technology it appears that workers in the U.S. nuclear industry

are receiving similar amounts of training to their European counterparts (excluding German technicians in plant operations). However, as shown in Table 6, if one examines the content of the training programs, half of all training in the U.S. nuclear industry for technicians (approximately 300 hours) is spent on fundamentals and 520 hours are spent on fundamentals, basic technology, and site familiarization combined, while European technicians are able to spend a greater portion of their training hours in much more advanced study of nuclear engineering and administration of the plant. This reflects the very different level of preparedness that workers have coming into this industry across these countries. Training costs of an employer in Europe in this industry are mainly in the provision of more advanced material rather than for basic remedial courses. This curriculum difference in technical training may have an impact on the ability of a worker to respond to new situations that arise that are outside the parameters of training simulations. In addition, it allows firms to hire fewer supervisors to monitor the technicians since the more advanced training technicians receive allows them to work with less supervision.

*On the one hand, it appears that the U.S. does not spend less than other countries on training. On the other hand, when one examines the content of training by country there seem to be important differences in what firms need to provide in their training programs.*

By looking at aggregate estimates of training across countries we are left with a mixed sense of the training differences. On the one hand, it appears that the U.S. does not spend less than other countries on training. On the other hand, when one examines the content of training by country there seem to be important differences in what firms need to provide in their training programs depending on the initial level of skills of their workers. These initial levels of skills in turn are influenced by the educational and early training systems of the countries. As a result, in some sectors for the same level of expenditures, U.S. firms do not end up with as well-qualified employees as their European or Japanese competitors. Consequently, underinvestment in training in the U.S. may be of two forms. First, in certain sectors, U.S. firms may be spending less and providing more limited training to their nontechnical or

nonmanagerial employees than their competitors in other countries. Second, in other sectors the level of expenditures or hours of training may be the same, but due to lower initial skill levels, this level of investment is not sufficient to achieve the same degree of skill proficiencies found in countries such as Japan or Germany. Policies directed at stimulating training to increase productivity should take both of these factors into account.

*The level of expenditures or hours of training may be the same, but due to lower initial skill levels, this level of investment is not sufficient to achieve the same degree of skill proficiencies found in countries such as Japan or Germany.*

In order to understand why the amount, delivery, and content of post-school training vary so much across countries, it is necessary to examine in more detail the training institutions in various countries and contrast them to the U.S. system. This is presented in the following sections.

**Private Sector Training: The United States**

There are a variety of potential sources for post-secondary school training in the United States. These include formal and informal company training, courses obtained at for-profit proprietary institutions (3.7 million enrolled every year), government training programs, apprenticeships (approximately 303,000 every year), the military (approximately 2 million veterans are trained every year for civilian jobs), and junior and community colleges (approximately 4.5 million not-for-credit students every year). There are many recent studies, using both firm and individual-based data, that have attempted to summarize the characteristics of post-school training in the U.S. (see for example, Barron et al. 1987; Bartel 1989; Bishop 1991; Brown 1989; Carey 1985; Carnevale 1986; Lillard and Tan 1986; Lusterman 1977; Lynch 1991a, 1992a, 1992b; Mincer 1988; Saari et al. 1988; and *Training* 1988). Across all of these surveys it is clear that much of the more formal training is concentrated in the early years of workers' employment experiences. Therefore, one of the more useful data sets that may be used to understand the current pattern of training

in the United States is the National Longitudinal Survey Youth (NLSY) cohort. This is a survey of a nationally representative sample of 12,686 males and females who were 14 to 21 years of age at the end of 1978. These youths have been interviewed in person every year since 1979 on all aspects of their lives. In particular, this survey contains detailed data on young people's education, jobs, military service, training programs, marital status, health, and attitudes on a wide range of issues.

In addition to asking about schooling, respondents in the NLSY were asked every year about the types of training (that lasted at least four weeks) they had received over the survey year (up to three spells), and the dates of training periods by source. Potential sources of training included business college, nurses' programs, apprenticeships, vocational and technical institutes, barber and beauty schools, correspondence courses, and company training. Training received in formal regular schooling (including two-year programs) is included in the schooling variables. The data on types of training received other than governmental training or schooling yield some of the most comprehensive information available in the U.S. on private- sector training. The training data are separated into three categories—company-provided on-the-job training; off-the-job training from business courses, barber or beauty schools, nurses' programs, technical and vocational institutions, or correspondence courses; and, apprenticeships. The following summarizes some of the major characteristics of post-school training for young workers described in more detail in Lynch (1992b).

***The percentage of 25-year-old males in 1988 who had received formal on-the-job training (OJT) by the age of 25 is 14 percent and the percentage of 25-year-old females in 1988 who had received formal OJT is 8 percent.***

**Table 7** uses data from the NLSY to show by the age of 25 the patterns of human capital accumulation for youths in the U.S. in the 1980s. Almost 25 percent of males and 15 percent of females still have not completed a high school degree by the age of twenty-five. Approximately 22 percent of all 25-year-olds have completed a four-year university degree. The percentage of 25-year-old males in 1988 who had received formal on-the-job training (OJT) by the age of 25 is 14 percent

**Table 7**
**Schooling and Training in the United States by the Age of 25**

| | |
|---|---|
| **Males** | |
| 76% | High school or more |
| 22 | Four years or more of college only |
| 15 | Two years college only |
| 14 | Formal company training |
| 30 | Off-the-job training |
| 3 | Apprenticeships |
| 58 | *No* post-school training |
| **Females** | |
| 86% | High school or more |
| 22 | Four years or more of college only |
| 20 | Two years college only |
| 8 | Formal company training |
| 33 | Off-the-job training |
| 0.5 | Apprenticeships |
| 60 | *No* post-school training |

Source: Lynch, Lisa M. "Young People's Pathways into Work: Utilization of Postsecondary Education and Training." Report prepared for the National Academy of Science, March 1992b, p. 54.

***While a relatively high percentage of young workers in the U.S. go onto some form of further education after high school, approximately 60 percent of young workers receive no additional training after they complete their formal schooling.***

and the percentage of 25-year-old females in 1988 who had received formal OJT is 8 percent. Females are more likely to receive off-the-job training than males. Finally, very few young workers in the United States—three percent of males, less than one percent of females—participate in apprenticeship training. While a relatively high percentage of young workers in the U.S. go on to some form of further education after high school, approximately 60 percent of young workers receive no additional training after they complete their formal schooling. In contrast, over 75 percent of German youths enter a formal apprenticeship, and over 50 percent of British youths enter an apprenticeship or government training program.

It is possible to examine in even greater detail the patterns of post-school training in the NLSY than is presented in Table 7 using detailed information collected in the 1988

interview of the NLSY. In the 1988 survey the training data also include training spells of less than four weeks. Removing the restriction of four weeks does not alter the pattern or incidence of off-the-job training or apprenticeship training, but it does increase the incidence of company-provided training. The following discussion presents breakdowns on the incidence of post-school training in 1988 for the NLSY respondents who were aged 23-29 at the 1988 survey and in the labor force, by educational status, union status, industry, occupation, firm size, and the duration of training.

*Approximately 15 percent of all college graduates in 1988 participated in company-provided training programs that year. Only 5 percent of males and 7 percent of females who were a high school graduate or dropout participated in formal on-the-job training.*

**Incidence of Training by Schooling**

There is a strong positive correlation between schooling and company-provided training. Approximately 15 percent of all college graduates in 1988 participated in company-provided training programs that year. Only 5 percent of males and 7 percent of females who were a high school graduate or dropout participated in formal on-the-job training. The relationship between schooling and off-the-job training is a bit different, especially for females. Female high school dropouts are more likely to receive off-the-job training than female college graduates (10 percent vs. 9 percent). However, for males, the more schooling, the more likely an individual is to have participated in some off-the-job training.

**Incidence of Training by Union Status**

A higher percentage of union workers than nonunion workers are likely to receive on-the-job training, especially for women union members. However, this pattern reverses itself for off-the-job training with nonunion workers more likely to participate in off-the-job training programs than union workers. This differential pattern may be the result of union contracts containing specific policies on worker training while nonunion workers interested in acquiring additional skills must seek training outside the firm.

**The Incidence of Training by Industry and Occupation**

Almost one-third of all young workers employed in finance, insurance and real estate, or in public administration

received some form of training during 1988. That training was evenly divided between on-the-job training and off-the-job training. Males in finance, insurance, and real estate were more likely to receive training than females (32 percent vs. 25 percent). Other industries with higher than average training levels included transportation, communication and public utilities, wholesale trade, and business and repair services. In these industries 16-20 percent of the young employees had received either on-the-job or off-the-job training during 1988. The industries with the lowest amount of formal company-provided training included retail trade and personal, professional, and related services. Finally, apprenticeships were concentrated in the construction industry. Unfortunately, the industries where most young workers are employed are not the industries with the highest levels of training. For example, only 9 percent of young males and 15 percent of young females were employed in either finance, insurance and real estate, or public administration. Those industries with the lowest levels of training (retail trade, personal, professional, and related services) accounted for 28 percent of young male employment and 54 percent of young female employment.

*Unfortunately, the industries where most young workers are employed are not the industries with the highest levels of training. Those industries with the lowest levels of training accounted for 28 percent of young male employment and 54 percent of young female employment.*

There are four main occupations in which over 20 percent of the young employees in 1988 had received some form of training—professional and technical workers, managers, clerical workers, and sales workers. In addition, over one-fifth of women employed in crafts occupations had received some training (especially company-provided training). Operatives and laborers were less likely to be engaged in any type of post-school training.

**The Incidence of Training by Firm Size**

When one examines the incidence of training by firm size, one observes that the probability of receiving company training is influenced by both the plant size and whether or not the firm has more than one location. Small plants with less than fifty employees are quite likely to offer training but only if they have more than one plant. Otherwise, there appears to be a linear

relationship between training and firm size—the larger the firm the more likely it is that a young person will receive some training. The only other exception to this is large firms of 1,000 or more employees with just one location. The probability of receiving training in these establishments is quite low.

**The Average Duration and Hours of Each Training Spell**

Most company-provided training spells last less than four weeks, while off-the-job training and apprenticeship programs are much longer. The amount of time spent in the training programs seems to fall into two categories. Thirty-eight percent of all training spells for young males last nine hours or less per week while over 50 percent of all female training spells last less than nine hours per week. At the same time over 37 percent of male training spells last 40 hours or more per week and 22 percent of female training spells last over 40 hours per week. On-the-job training is more likely to involve more hours per week than off-the-job training. This suggests a pattern of short, intensive, employer-provided training and less intensive but longer lasting time in off-the-job training.

*One of the key differences in post-school training in the U.S. compared with training received by young workers in Europe is the lack of certificates or formal qualifications at the completion of training, except for the minority who do an apprenticeship.*

In summary, most company-provided, formal on-the-job training in the United States is acquired by college graduates who are employed in finance, insurance, and real estate. Those who receive training are also more likely to be managers, professional, or technical employees in these industries as well as working for larger firms. Black and Hispanic youth are much less likely to have received company-provided training than white males and females. Unionized workers are more likely to have received company-provided training while nonunion workers are more likely to have participated in off-the-job training. One of the key differences in post-school training in the U.S. compared with training received by young workers in Europe is the lack of certificates or formal qualifications at the completion of training except for the minority who do an apprenticeship. As shown in Blanchflower and Lynch (1991) the certification of skills acquired by British youths in their post-school training is a major component in the return to

training and raises the return relative to their U.S. counterparts. The certification improves the ability of employers to identify appropriate and qualified workers, and it provides an opportunity for young workers to carry their training from one firm to another.

## Apprenticeship Training: The Case of Germany

*A typical apprenticeship in Germany lasts about two to three and-a-half years and it combines plant-based practical training with school-based technical and theoretical instruction.*

There has been a great deal written about the German "dual system" of apprenticeship training. There are three primary components to the German training system—coinvestment in training, codetermination of the content of the training program, and certification of skills upon completion of training. A typical apprenticeship in Germany lasts about two to three-and-a-half years and it combines plant-based practical training with school-based technical and theoretical instruction. An apprenticeship will typically begin at the age of 16, however, in recent years the age when an apprenticeship begins has been increasing to 18. Although apprenticeships are not restricted just to young workers, young people are the major pool for apprenticeship programs. The direct costs of an apprenticeship are shared between employers and the state, although employers pay for the majority of the direct costs. The training allowance that a German worker receives during an apprenticeship is much lower than the wage of a skilled worker and is negotiated by unions and employers. As reported in Casey (1986) a 16-year-old would earn approximately 25 percent of the skilled wage rate and that would rise to 44 percent by the age of 18. Therefore, there is "coinvestment" in training between workers and the firm, with firms and the state covering direct costs and workers receiving much lower wages.

The contents of the training programs on the shopfloor and in the schools are determined in a tripartite way at the federal level. Unions, employers' confederations, and the state will negotiate the curriculum and the types of occupations to be covered by an apprenticeship. At the plant level, training is

guided by the works council which oversees the training contract. These standards are maintained nationally through a set of exams that are locally administered that cover both theoretical and practical aspects of the training. Those apprentices that pass these exams receive a certificate which is recognized and respected all over Germany. This certification of skills allows the training to be more portable from employer to employer.

Perhaps more important than the structure of the apprenticeship programs are the supporting institutions associated with apprenticeships in Germany. As discussed by Soskice (1991) local Chambers of Commerce play an important supporting role. They persuade larger firms to offer more apprenticeships than they eventually expect to hire so that smaller firms will be able to have a more skilled pool of labor from which to recruit. They will also attempt to minimize the degree of "cherry picking" or poaching that goes on. Soskice also describes the importance of incentives for young people to do well in school. Since youths must apply for apprenticeships and employers use school grades as an important determinant of selection there is a built-in incentive for youths to do well in school even if they are not planning on attending a university. Finally, banks play an important role by taking a long-term view of firms' decisions to increase investments in training.

***Perhaps more important than the structure of the apprenticeship programs are the supporting institutions associated with apprenticeships in Germany.***

There is also a substantial amount of further training or retraining for adult workers in Germany. This training is not as regulated as apprenticeship training and the degree of employee involvement depends on the role the plant works council decides to take. As discussed in Lane (1991) over 50 percent of German firms are involved in further training and there is a current debate on whether further training should receive the same degree of regulation as apprenticeships do.

One of the unique features of the German system of training since the mid-1970s is that while the number of apprenticeships declined in countries such as the U.S. and the U.K., the number of apprenticeships in Germany actually increased. This was an explicit policy to minimize unemploy-

**Table 8**
**Percent of Workforce in Production Employment with Qualifications—Germany**

| Level of Qualification | 1982 | 1990 (forecast) | 2000 (forecast) |
|---|---|---|---|
| None | 38.1% | 31.1% | 24.4% |
| Apprenctice | 54.0 | 59.9 | 65.9 |
| Certificate of Foreman or Technician | 6.9 | 7.6 | 8.3 |
| University Degree | 1.0 | 1.2 | 1.5 |

Note: No qualifications refers to no certificate but these workers should not be compared to high school dropouts in the U.S.

Source: Lane, Christel. "Vocational Training and New Production Concepts in Germany: Some Lessons for Britain." *Industrial Relations Journal*, 1991, pp. 247-59.

***While young people in the U.S., U.K., and Italy wait longer between completing school and entering their career job, young workers in Germany are engaged in a well-structured, formal, skills development program.***

ment, especially youth unemployment. So while young people in the U.S., U.K., and Italy wait longer between completing school and entering their career job, young workers in Germany are engaged in a well-structured, formal, skills development program.

The consequences of this policy on the skill level of production workers can be seen in **Table 8**. By the year 2000, it is forecasted that two-thirds of all German production workers will have had an apprenticeship program. While the percentage receiving university degrees that are in production employment is also rising, it is clear that most of the advanced training for these workers in Germany comes through apprenticeships and advanced technicians programs.

While there are many advantages of the German apprenticeship program, it is important to note some of the difficulties associated with these programs. For example, the limited participation of children of first generation immigrant workers in the program and the limited access of females to traditional male apprenticeships has not changed much during the 1980s.

Women are more concentrated in low-paying clerical, shop assistant, and hair dressing apprenticeships while children of immigrants have a much lower overall take-up rate in apprenticeships. This does not bode well for the future economic mobility of these groups.

Not all apprenticeships in Germany consist of many hours of off-the-job training in local schools and then on-the-job training and work. Specifically, as discussed in Soskice (1991), apprenticeships in the handiwork sector have much less formal training than those associated with larger manufacturing firms. This is a highly competitive sector characterized by small firms, so the apprenticeship allows these firms to use unskilled labor at a low apprenticeship wage rather than at higher unskilled adult wages. In this sector the apprenticeship program also seems to be a way around higher manufacturing wages. Recently, expansions in apprenticeship programs (training contracts for young workers where their wages are set much lower than the adult wage) in countries such as Italy and Spain have often been used in this way. In these cases the amount of training provided is much lower than what is provided in the traditional apprenticeship program in a large German manufacturing program. One could even wonder whether they should be labeled training programs.

*Despite difficulties, the German system seems to do a remarkable job in the skills preparation of new entrants into the labor market who are not going to be university graduates and in providing further training to those already in employment.*

The types of apprenticeship programs offered seem to be somewhat slow to respond to changes in technology and industrial structure. Much of the 1980s was devoted to renegotiating the number of categories of apprenticeships from 465 in 1980 to 374 in 1991, but this process has been very slow. Finally, smaller firms are often reluctant to provide more apprenticeships since the turnover of apprentices from smaller firms is much higher than from larger firms. At the same time, larger firms are persuaded to train more workers than they may actually need. Despite these difficulties, the German system seems to do a remarkable job in the skills preparation of new entrants into the labor market who are not going to be university graduates and in providing further training to those

already in employment. Young workers learn a specific skill but perhaps more importantly they learn "how to learn" in the German system.

## Enterprise-Based Training: The Case of Japan

*Post-school training is firm driven in Japan and there are virtually no apprenticeships. This is a strategic decision related to the Japanese organization of work.*

The Japanese system of training is almost orthogonal to the German system. Post-school training is firm driven in Japan and there are virtually no apprenticeships. This is a strategic decision related to the Japanese organization of work. If the key to increased productivity is a workforce that is flexible and capable of being retrained, then perhaps the last thing you want to do is to put workers into an apprenticeship program that gets them to identify themselves with a particular occupation. Instead, Japanese work organization depends on workers feeling loyal and attached to a firm rather than to any particular job. This is a very important characteristic of the Japanese system.

It is very difficult to obtain precise numbers on on-the-job training in Japan because the training is so embedded into the organization of work. Job rotation is a key feature of Japanese firms and there is constant training associated with this rotation. Supervisors are evaluated on how well their workers can perform their tasks, so a great deal of their time is devoted to training their workers to be more efficient. This time is not usually included in measures of training. The system of extensive firm training is supported by two structures. The first is detailed screening and selection of employees before they join the firm. Firms look for an aptitude for training in applicants. Second, the average tenure on the job is longer in Japan than in other countries. This is shown in **Table 9**. The numbers presented in Table 9 are not age corrected so some of these differences across countries in average tenure may simply reflect differences in the age structure of the workforces. However, even correcting for this it appears that Japan and

**Table 9**
**Percent of Workforce with Current Employer Ten Years or More**

| Country | |
|---|---|
| United States | 26.7% (1987) |
| Canada | 26.6% (1983) |
| West Germany | 42.1% (1985) |
| United Kingdom | 29.8% (1984) |
| France | 36.0% (1984) |
| Japan | 48.0% (1982) |
| Australia | 19.4% (1981) |

Source: Bishop, John. "A Program of Research on the Role of Employer Training in Ameliorating Skill Shortages and Enhancing Productivity and Competitiveness." Mimeo. Cornell University, NY, September 1991, and Organisation for Economic Co-operation and Development. "Economic Outlook." Paris: OECD, 1984.

Germany have a much higher percentage of their workforces in long jobs than the U.S.

The simplified view of Japan is that a bargain is struck between workers and firms. Firms provide lifetime employment to the workers while workers in turn do not leave the firm. This makes it easier for firms to capture the returns to training investments and therefore they are more willing to invest in even more general training. Over 97 percent of all firms that employ 1,000 employees or more provide training to their workforce. This view of Japanese firms, however, applies to a minority of firms, and primarily to male but not female workers. In addition, certain sectors such as finance and banking that have recently been deregulated have experienced a dramatic increase in their employee turnover in the last five years. In manufacturing, firms with less than 100 employees account for 55 percent of all workers. Yet only 59 percent of firms with 30-99 employees provide training (see Sako 1990).

***The simplified view of Japan is that a bargain is struck between workers and firms. Over 97 percent of all firms that employ 1,000 employees or more provide training to their workforce. This view of Japanese firms applies to a minority, and primarily to male not female workers.***

Therefore, if most training in Japan takes place in larger firms employing male workers, how relevant is this structure to the U.S. labor market? Perhaps the real lesson from Japan is

**Table 10**
**External Providers of Training to Small and Medium-Sized Enterprises in Japan**

| | Percent of Firms Using |
|---|---|
| 1. Joint Training by Cooperative Associations | 45.1% |
| 2. Private Sector Training Agencies | 44.3 |
| 3. Customer Companies | 38.0 |
| 4. Chambers of Commerce | 34.6 |
| 5. Public Vocational Training Centers | 4.2 |
| 6. Research Universities | 3.4 |

Source: Sako, Mari. "Enterprise Training in a Comparative Perspective: West Germany, Japan, and Britain." Report to the World Bank. Mimeo, London School of Economics, September 1990.

***Due to the demands associated with just-in-time (JIT) production systems, there are very strong links between larger companies and their smaller suppliers. One of these links includes larger customers training the workers of their smaller suppliers.***

not just from the nature of work organization in large firms but also in how small and medium enterprises (SMEs) train their workers. Even though these firms do not train as much as larger Japanese firms, they still train much more than their U.S. counterparts. **Table 10** presents a summary of the sources used by SMEs for the delivery of their training needs. Perhaps the most interesting source of training for smaller firms comes from customer companies. Due to the demands associated with just-in-time (JIT) production systems, there are very strong links between larger companies and their smaller suppliers. One of these links includes larger customers training the workers of their smaller suppliers. This may be a crucial strategy for those U.S. firms that have switched to JIT and are trying to find ways to tighten standards and links with their suppliers.

In Japan, as in Germany, there are a set of institutions which support the training structures we observe. Schools in Japan do not focus on technical skills but rather concentrate on developing math, science, reading, and what Hashimoto (1991) calls "citizenship" skills. Hashimoto argues that these citizenship skills help workers communicate better when they are in teams in the workplace. In addition, schools establish links with certain firms so students know that their school

performance will influence their ability to obtain certain jobs. The government also supports training through subsidies for in-house training, especially for smaller firms. In addition to national and prefectural level public vocational training, there is a national Trade Skill Test System. These tests are set to government standards and are mainly in manufacturing and construction. While passing these tests is not a condition of employment, many firms provide special bonuses to workers who pass these tests. Finally, banks in Japan, as in Germany, have traditionally taken a longer view towards firms' investments in R&D and training than their U.S. counterparts.

*To stimulate more firm-provided training, the government passed a training tax to be paid by every firm with more than 10 salaried employees.*

## Stimulating Training with a Training Tax: The Cases of France and Australia

The French government in 1971 began a series of legislative reforms aimed at increasing the education and training of the workforce (for an excellent summary see a special issue on training in *Formation Emploi* (April-June 1991)). As seen in Table 2 there has been almost a doubling of the number of young people staying on in school beyond the minimum level in recent years in France. To stimulate more firm-provided training, the government passed a training tax to be paid by every firm with more than 10 salaried employees. Initially this tax was 0.8 percent of the total wage bill. In 1987 this was raised to 1.2 percent, in 1992 this will rise to 1.4 percent, and in 1993 the rate will be 1.5 percent. In 1992, firms with less than 10 employees will be required to spend 0.15 percent of their wage bill on training. What is required by law is the expenditure not the training. Therefore, if a firm can document spending more than 1.2 percent on training they do not have to pay the tax, but if they spend less they must make up the difference to the Public Revenue Office. As shown in Table 4 the average firm in France in 1984 spent 1.6 percent on training so this tax only bites for a minority of firms.

Nevertheless, there have been a set of institutions that have emerged as a result of the training tax (CEREQ 1991). The first were training insurance funds. These are jointly administered by unions' and employers' training funds. The second are training associations that were created by sectoral employers who wanted to retain direct control over the content of training programs. Both of these institutions are used to create economies of scale in the provision of training and therefore provide more training for the same amount of money than what an individual employer would be able to provide.

*Both of these institutions are used to create economies of scale in the provision of training and therefore provide more training for the same amount of money than what an individual employer would be able to provide.*

However, even with the stimulus of this training tax, training in France is still concentrated among technical employees rather than unskilled workers and in large firms rather than small firms. This is illustrated in **Table 11**. In spite of efforts to use the levy to increase training for unskilled workers, and those employed in smaller firms, this does not seem to be happening. However, the figures reported in Table 11 do not indicate what proportion of unskilled workers or employees in smaller firms have taken advantage of public-supported training institutions, so it is difficult to infer overall what has happened for these workers. While the training levy may have had some impact on the training expenditures of firms, this tax on its own does not generate some of the key features of the German and Japanese training system—cooperation and coordination of the interested parties (employers, unions, workers, government, schools, and training institutions).

Employers in France negotiated with unions for changes in the training tax in 1991. Specifically, in July of 1991 the tax was modified to establish the concept of coinvestment in training between firms and workers. Any worker receiving more than 300 hours of training must spend 25 percent of that additional time on his or her own time, not during work hours. In addition, the wage of workers on training leave will be 90 percent of their regular wage, not 100 percent as it was in the past.

**Table 11**
**Proportion of Salaried Employees in Training (1988)—France**

| | Firm Size (Number of Employees) | | | | | |
|---|---|---|---|---|---|---|
| Skill Level | 10-19 | 20-49 | 50-499 | 500-1999 | Less Than 1999 | Total |
| Unskilled | 2% | 3% | 9% | 15% | 24% | 12% |
| Skilled | 4 | 6 | 14 | 23 | 41 | 21 |
| Non-Manual | 9 | 12 | 22 | 33 | 44 | 25 |
| Managers and Technical Staff | 14 | 20 | 35 | 53 | 67 | 47 |
| Total | 8 | 11 | 21 | 34 | 49 | 29 |

Source: CEREQ. *Training and Employment: French Dimensions*, 1991.

***In 1990, Australia adopted a training tax which is called the Training Guarantee. All enterprises in Australia that had a payroll greater than $200,000 were required tospend 1.5 percent of their payroll on training in 1991. This rate rose to 2 percent in 1992.***

In 1990, Australia adopted a training tax which is called the Training Guarantee. All enterprises in Australia that had a payroll greater than $200,000 were required to spend 1.5 percent of their payroll on training in 1991. This rate rose to 2 percent in 1992. If firms do not spend this amount on training, they give the difference between this levy and what they spent to the government which in turn finances additional training activities. This levy was introduced because there was a sense that employers needed to take greater responsibility for their own training requirements.

There are a variety of factors which led to this training tax as summarized in Baker (1991). Firms were reluctant to invest in training because of wage settlements that included binding minimum wages and other rigidities. This made it very difficult for firms to share training costs for general training with their workers. There was relatively high turnover, as shown in Table 9, and firms were also concerned about the poaching of workers in whom they had invested. It was even

argued that employers in Australia preferred to fill skilled vacancies with immigrant labor rather than retraining domestic workers. (This claim has not been upheld in empirical work by Baker and Wooden (1991).) At the same time Australian workers were reluctant to invest in training off-the-job because wage profiles were relatively flat so the return to training would be quite small.

*Chapman and Stemp argue that there was underinvestment in training in Australia due to externalities in which training benefits spill over to other firms. Therefore, they argue that there should be government intervention through policies such as a training levy.*

Finally, Chapman and Stemp (1989) argue that there was underinvestment in training in Australia due to externalities in which training benefits spill over to other firms. On the one hand, expenditures on training increase a firm's ability to adopt, develop, and implement new technology. However, these innovations diffuse easily to competitors and individual firms are unable to internalize benefits from training innovations. Therefore, they argue that there should be government intervention through policies such as a training levy. They conclude that this intervention, however, should vary by industry since the degree of problems associated with this type of spillover may be different for each industry.

The Australian government appears to have agreed with arguments supporting intervention to increase training, but has not adopted an industry-by-industry approach. It is informative to examine what constitutes appropriate expenditures that firms can apply to their requirement of training expenditures equal to at least two percent of the wage bill. Any expenditure that arises principally from an eligible training program counts. For example, if a worker goes to another city for a training program and also does productive work there, all expenses associated with the trip can count as long as 50 percent was spent on training. Training expenditures include wages, travel, accommodations, meals, child-care expenses, and other direct costs associated with training such as tuition. Firms may hire eligible trainers or train their own trainers. Once these employees are trained, their entire salary can be counted towards training expenditures if they spend 50 percent of their time doing training.

While this all sounds very reasonable, in practice there are some concerns with this structure. First, an individual can become a qualified trainer through highly reputable institutions or through firms such as "Mail Me A Diploma for $15" (National Training Board Network Newsletter 1991). The government is currently establishing nationally recognized standards and certificates to eliminate the use of trainers approved through this second type of institution. Second, eligible training programs must only have at least 50 percent of the program not devoted to social or recreational activities. So up to 50 percent could be social or recreational but all expenditures would be included. In addition, on-the-job training can include periods of close supervision and therefore a supervisor's salary could be included as a training expenditure. All of this can lead to firms playing games in order to meet the training expenditure requirements. Unfortunately, empirical evidence on the impact of this training levy on training practices and productivity of firms is not yet available, but this should be an interesting country to watch for future developments since the institutional structure of unions, wage determination, and the degree of coordination between the interested parties varies so much between Australia and France.

*All of this can lead to firms playing games in order to meet the training expenditure requirements.*

## Local Training Consortiums: The Case of the United Kingdom

In 1964, Industrial Training Boards (ITBs) were created in Britain to promote the skill development of the workforce. In particular, as discussed in Blanchflower and Lynch (1991), these ITBs could impose levies on employers to raise training funds to support an extensive apprenticeship program. The ITBs also established standards and structures for these apprenticeships. Most programs involved a day-release program to off-site classroom training. In addition, there were nationally recognized exams that apprentices or even those

**Table 12**
**Training Coverage for U.S. and British Youths**

| Great Britain | All | Males | Females |
|---|---|---|---|
| Ever Had Any Training | 52% | 65% | 35% |
| Ever Started an Apprenticeship | 24 | 39 | 5 |
| Ever Started Other Training | 33 | 34 | 30 |
| **United States** | **All** | **Males** | **Females** |
| Ever Had Any Training | 35% | 33% | 36% |
| Ever Started an Apprenticeship | 3 | 4 | 1 |
| Ever Started On-The-Job Training | 8 | 8 | 7 |
| Ever Started Off-The-Job Training | 28 | 25 | 31 |

Note: Data refer to the incidence of training for young workers who are not university graduates and are age 23 in Great Britain and age 25 in the United States. Data is drawn from the British National Child Development Survey and the U.S. National Longitudinal Survey Youth Cohort.

Source: Blanchflower, David and Lisa Lynch. "Training at Work: A Comparison of U.S. and British Youths, 1991." In L. Lynch, ed., *The Privatization of Skill Formation: International Comparison*. Chicago: University of Chicago Press, 1991.

***This system of training noncollege youths was dismantled by the Thatcher government in the 1980s and apprenticeships have been rapidly replaced by a government-led Youth Training Scheme (YTS), now called Youth Training.***

who had participated in employer-sponsored training could take at the completion of their training. This system provided a great deal of skill training for British school leavers, especially those who did not go on to further education. "School leavers" refers to those youths who complete school at the age of 16, the minimum school leaving age in Britain. The majority of youths leave school at this age. **Table 12** presents some comparisons of the extent of post-school training in Britain and the U.S. for nonuniversity graduates. There is much more post-school training in Britain than in the U.S., especially for males. For females, however, the U.S. system seems to provide as much if not more than the traditional British training system.

This system of training noncollege youths was dismantled by the Thatcher government in the 1980s and apprenticeships have been rapidly replaced by a government-led Youth Training Scheme (YTS), now called Youth Training. All 16- to 18-year-olds who are not in school or employed who wish

to receive support must participate in YTS. This has abolished all youth unemployment in this age range. YT is administered at the local level by Training and Enterprise Councils (TECs) (see U.K. Department of Employment (1988) for a complete description of these councils). The TECs were modeled after the Private Industry Councils (PICs) in the U.S. and the Boston PIC in particular. There are over 90 TECs in the U.K. which are responsible for administering local training initiatives. Local firms are represented on the TECs with non-mandatory participation by the trade unions and other interested groups. The TECs are not able to raise any funds like the ITBs were and this has led to problems of underfunding in the current recession. Therefore, the major source of funding for most TECs at the moment comes from the government to support programs such as YT. This has frustrated some TEC members who as local business representatives do not feel they should be administering what they feel is an unemployment benefits program.

*YT is administered at the local level by Training and Enterprise Councils (TECs). While some of these problems may just be growing pains associated with a new organization, the TECs appear to be in crisis.*

In addition, there are problems associated with the local structure and autonomy of the TECs, especially for large, multi-site firms. These firms find themselves in a position where they are negotiating with many different local TECs on the training policies of the area. This can result in large variations in the training of workers by areas, so some large firms have left the TECs. These larger firms, however, typically would have had more resources that they could have contributed to the TECs so their departure further affects the funding of the TECs. While some of these problems may just be growing pains associated with a new organization, the TECs appear to be in crisis. This crisis is further highlighted by recent surveys by the Confederation of British Industries which seem to indicate that fewer firms in Britain feel that they face a skills shortage as they did in the late 1980s. Many are even reducing training expenditures. Much of this seems to be driven by the current recession in Britain. More generally, the TECs represent a large-scale attempt to increase cooperation and coordination in the area of training. Unfortunately, not all of the

parties involved in training are a mandatory part of the TECs (e.g., there is no mandatory role for unions). The emphasis on local autonomy has also increased the coordination difficulties for larger firms with multiple sites across the country.

The replacement of apprenticeship programs with YT also seems to have affected the quality of post-school training for youths in Britain. As shown in Blanchflower and Lynch (1991) one of the major characteristics of the traditional training system in Britain was the high number of youths who received nationally recognized qualifications after training. In the 1970s and early 1980s only 18 percent of all apprentices did not receive qualifications after an apprenticeship. By 1989 this number had increased to 35 percent. One possible explanation of this trend is that the YT program is much shorter in duration than a traditional apprenticeship and as a result participants may have greater difficulty in meeting all the skill requirements in the qualification exams. The U.K. is currently undertaking a massive reform of all of these qualification exams.

*The YT program is much shorter in duration than a traditional apprenticeship and as a result participants may have greater difficulty in meeting all the skill requirements in the qualification exams.*

## Government-Supported Training: The Case of Sweden

While the focus of this paper is on the training of new entrants and currently employed workers who require further training, it is worth exploring briefly the alternative training strategy followed in Sweden. In Sweden, as in Germany and Japan, there has been a high degree of coordination and cooperation among all the interested parties in the area of skills development. Traditionally, the Swedish employers confederation and the Swedish labor confederations have determined at a highly centralized level a wide range of labor market practices, including training. The government provided support to these negotiated policies through its labor market training programs for displaced workers, relocation funds, and temporary work. This highly centralized system, however, has

deteriorated in recent years with employers pushing to decentralize collective bargaining. In addition, the government is under increasing pressure to reduce public expenditures, including those on training.

Nevertheless, government-sponsored training programs represent a larger component of skills development in Sweden than in many other countries. Over four percent of GNP in Sweden is spent on a variety of labor market programs including temporary relief work, training, mobility grants, employment service, and special jobs for the disabled. Government-sponsored training programs are approximately six months long and almost two percent of the workforce is in a government training program every year. Unemployed workers, however, are the most likely to be in training programs and they have often participated in other training programs. Therefore, government-financed training is not evenly distributed across the workforce.

***Government-sponsored training programs represent a larger component of skills development in Sweden than in many other countries.***

There has been relatively little empirical analysis or evaluation of these programs. Bjorklund (1990) presents a review of the existing empirical evidence on the effectiveness of these various programs. The empirical findings on training programs are ambiguous with some studies even finding that young people who participate in government training are more likely to have longer unemployment. The most difficult challenge for Sweden in the immediate future will be its ability to maintain such a high level of government support for these types of labor market programs as it joins the European Community and coordinates its fiscal and monetary policy with other member countries.

## Implications for a U.S. National Training Policy

By looking at aggregate estimates of training across countries we are left with a mixed sense of the training differences. On the one hand, it appears that the U.S. does

not spend less than other countries on training. On the other hand, when one examines the content of training by country there seem to be important differences in what firms need to provide in their training programs depending on the initial level of skills of their workers. These initial levels of skills in turn are influenced by the educational and early training structures of the countries. As a result, in some sectors for the same level of expenditures, U.S. firms do not end up with as well-qualified employees as their European or Japanese competitors. Consequently, underinvestment in training in the U.S. appears to be of two forms. First, in certain sectors, U.S. firms may be spending less and providing more limited training to their nontechnical or nonmanagerial employees than their competitors in other countries. Second, in other sectors the level of expenditures or hours of training may be the same, but due to lower initial skill levels, this level of investment is not sufficient to achieve the same degree of skill proficiencies found in countries such as Japan or Germany. Policies directed at stimulating training to increase productivity should take both of these factors into account.

*A key feature of a successful training strategy in the U.S. will be how well we coordinate our training programs and increase the cooperation among all those involved in training and its outcomes.*

While the actual training delivery system varies from country to country, there does seem to be one important and common characteristic of those countries with the most extensive post-school skills development—coordination and cooperation of all the interested parties. These include employers, unions, workers, government (national and local), schools, and training institutions. Therefore, independent of the particular menu of training delivery systems we choose in the United States, a key feature of a successful training strategy in the U.S. will be how well we coordinate our training programs and increase the cooperation among all those involved in training and its outcomes.

There are a variety of federal options that could be pursued to stimulate further training. However, no single option will meet all of the training needs of new entrants, currently employed workers, displaced workers, or the unem-

ployed. Therefore, a variety of options and initiatives will need to be created to address this wide range of training needs. In addition, any national policy needs to be coordinated with regional, state, local, and industry efforts so that it complements and builds on local training needs and knowledge (see Batt and Osterman (1993) for some examples of successful local initiatives). Finally, government funding of training initiatives will be most effective when the funding or program counteracts a market failure in the provision of training. One policy option the federal government could pursue is a tax credit for corporate training. This may act as an incentive to management to examine the benefits associated with greater training. For this option to have a huge impact on the overall level of training in the U.S., however, one needs to assume that the chief barrier to training is ignorance of its benefits. This is unlikely to be the case. Another weakness of this policy option is that the government may end up funding training that would have otherwise been funded by the firms. An alternative to a credit would be a national training levy. Experience from France, however, seems to indicate that this type of tax alone is not a sufficient guarantee that unskilled workers, or those in smaller firms, will receive more employer-provided training. Depending on the size of the levy it could be a burden on smaller firms that are already struggling. Instead, if the rate is kept quite low so that it is not a large burden on firms, the overall level of training may not be increased that much. There could be different rates for different sized firms, but again, this will not stimulate training in smaller firms. Finally, no matter how the tax is structured, there will always be some firms that manipulate expenditures to beat the system, as seen already in some Australian firms.

***A more effective measure to assist small and medium-sized employers to be able to provide more training is for the federal government to provide resources for the creation of training consortiums.***

A more effective measure to assist small and medium-sized employers to be able to provide more training is for the federal government to provide resources for the creation of training consortiums such as those in Great Britain. However, in order for these consortiums to be successful, it is important

to have representation from a wide range of local groups including employers, unions, local government, schools, and other training institutions. The experience in Britain highlights the importance of proper funding of these consortiums if they are to be successful. In particular, since these local consortiums seem to be most effective for small and medium-sized enterprises, and given that these firms are typically the most resource constrained, financial support from the government will be critical.

*The creation of a national standard of certification of workplace skills could be one way to maintain standards and allow the portability of training across employers.*

Training consortiums and training levies or credits are probably more effective in stimulating the provision of training to workers already employed. For new entrants and re-entrants into the labor market, an expansion of apprenticeship programs may be more appropriate to ease the transition from school to work, and to attach greater status to the post-school training of those who do not graduate from college. But these programs need to be developed in such a way as to strengthen the incentives of also doing well in school. In this way a smaller proportion of the training budget of employers would be spent on remedial training and more would be spent on advanced skills development. In general, while increased funding of remedial education is important for those workers currently in the workforce, there needs to be a reexamination of the K-12 system and the level of general skills it provides.

The creation of a national standard of certification of workplace skills could be one way to maintain standards and allow the portability of training across employers. If government funding is used to stimulate additional funding, then a system of certification could promote the effectiveness and quality of the training provided. This would be less expensive to monitor than going to every employer to ensure that government subsidies are being used to provide general rather than specific training. The possibility of receiving a nationally recognized qualification also increases the incentive for youths to participate in this training. These exams could also provide a way of granting higher status to noncollege training as is the

case in countries such as Germany and Switzerland. Finally, if a training levy is imposed, these training standards could reduce some of the problems associated with ensuring that all of the money applied to meeting the training levies actually funds training.

In addition, the government should consider ways in which it could increase the ability of youths to borrow funds to pay for training. Although the default rate on government loans used to fund costs associated with attending a proprietary institution is quite high in the U.S. (approximately 40 percent) there is evidence (Lynch 1992a) that this type of training has a positive impact on the labor market experience of youths, especially women and minorities. This allows these workers who often receive less employer-provided training to obtain additional human capital which is critical for their career development.

*If a training levy is imposed, these training standards could reduce some of the problems associated with ensuring that all of the money applied to meeting the training levies actually funds training.*

All of the policy options discussed so far are more relevant for employed workers or new entrants. There are still two other groups of workers with training needs—displaced workers and long-term unemployed workers. These are two groups for whom there have been more government programs. In addition to government programs, perhaps one of the more interesting developments in the 1980s for displaced workers has been the negotiation of retraining benefits for at-risk unionized workers in sectors such as auto and telecommunications at risk of displacement. Federal efforts that can stimulate the creation of local training institutions that can be used by employers to assist displaced workers should be encouraged.

There has been an extensive evaluation of the impact of government training programs on the long-term unemployed, and the findings are mixed. Unfortunately, in recent years the discussion seems to have focused on the impact of any type of government training program versus none, rather than evaluating the relative effectiveness of various government programs such as job search skills; remedial-skill training; specific

occupational training; and, interpersonal skills or problem-solving training. Efforts to evaluate the returns to these different types of training interventions could be useful for the private sector.

Finally, the government should consider additional incentives to improve the effectiveness and quality of worker training. These could range from a clearinghouse of information for firms interested in training, to programs to assist firms in evaluating the effectiveness of their training programs. There have been many training initiatives across the country but little has been done to pool the information gathered from these initiatives. Many of these initiatives could be used to evaluate not only how additional training is helpful, but also what types of training programs work best in different sectors. It seems to be much easier to fund a new experimental program in the U.S. than to fund a program which diffuses pilot programs to a broader group of firms or individuals. Part of the reason why there is reluctance to move from pilot to wider training programs is that there is very little evaluation of the impact of the training on productivity. Therefore, as the government collects information on private sector training programs, it should also assist in the formal evaluation of these programs.

*Many of these initiatives could be used to evaluate not only how additional training is helpful, but also what types of training programs work best in different sectors.*

With a menu of training initiatives at the national, state, and local level, we will hopefully reestablish a competitive advantage of a highly trained workforce. However, reinvesting in training will not be a sufficient condition to improve and maintain competitiveness. It will also be necessary to reinvest in physical capital for firms to compete internationally, and for workers to maintain their standard of living.

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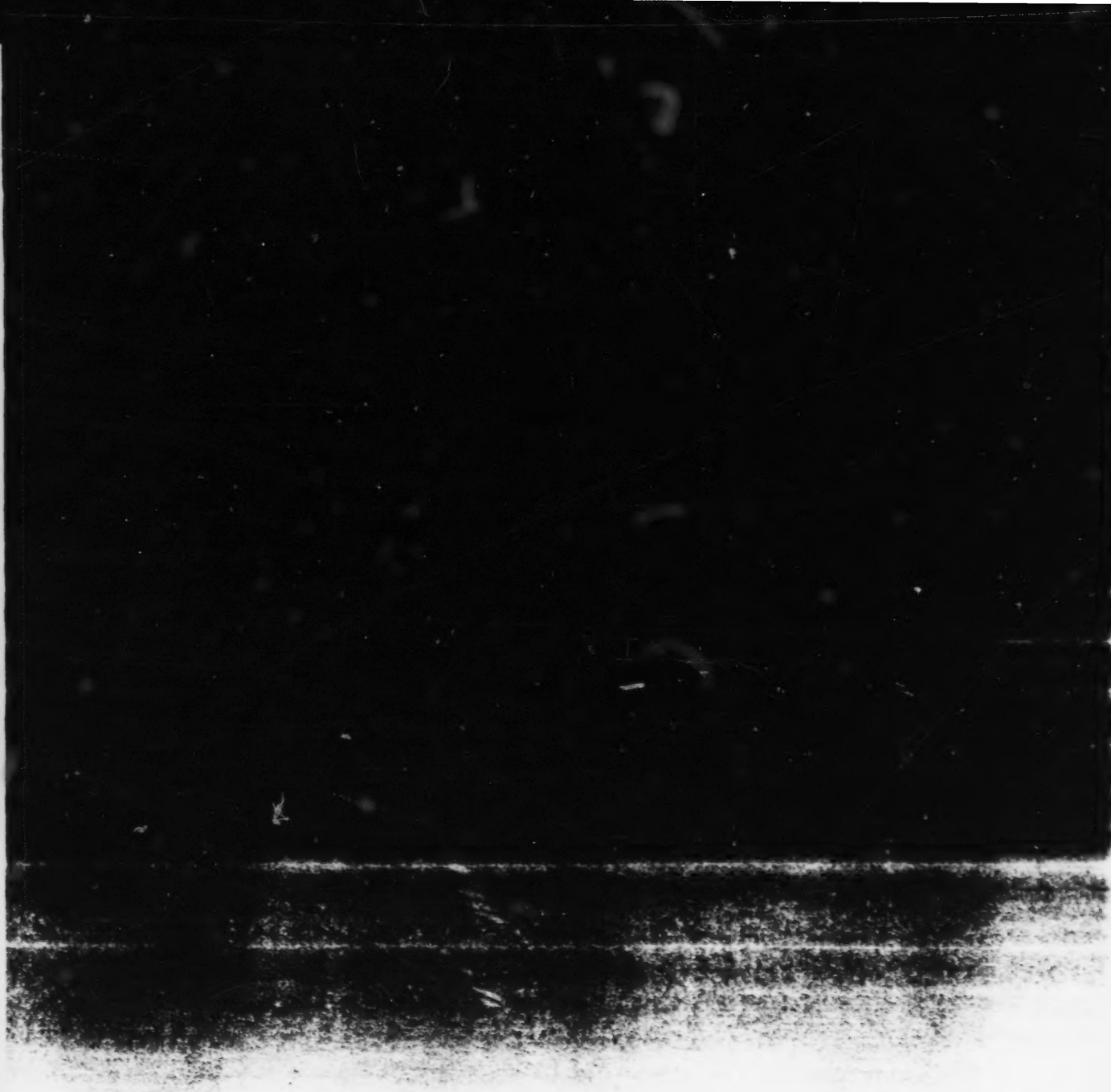


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